

Notice of Allowability

Application No.

09/732,452

Examiner

VAN H. NGUYEN

Applicant(s)

MILLER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendments submitted 11/4/05.
2. ☒ The allowed claim(s) is/are 1-4, 7, 9-15, 19, 21, 22, 25, and 26 (now renumbered as 1-17).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 11/8/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Lance R. Sadler (Reg. No.38, 605) on November 18, 2005.

3. **The application has been amended as follows:**

In the Claims:

All previous copies of claims 1, 11, and 19 have been replaced with the following clean copy of claims 1, 11, and 19 as amended by the Examiner's amendment:

Claim 1. A computer-implemented method of generating a development project including at least a matrix switch and one or more adjacent objects, the method comprising:

establishing an initial rendering of the development project; and

negotiating buffer size and attribute characteristics between an input/output of the matrix switch and an input/output of adjacent objects, wherein the negotiated

buffers are utilized to communicate media content between the matrix switch and adjacent buffers by sharing a common buffer between inputs and outputs;

wherein the matrix switch attempts to be an allocator for buffers shared with each of its input(s) and output(s),

wherein if the matrix switch cannot be an allocator for one or more of its input(s) or output(s), such input(s) and output(s) do not share a common buffer with objects coupled thereto, and

wherein the development project is a media processing project rendered as a filter graph of processing chains.

Claim 11. A computer system implementing a development system, the development system comprising:

one or more processing chains; and

a matrix switch, coupled to the one or more processing chains, to recursively pass content received from the one or more processing chains through one or more processing objects to implement a development project, wherein the matrix switch negotiates buffer size and attributes between the matrix switch and adjacent objects, wherein the negotiated buffers are utilized to communicate media content between the matrix switch and adjacent buffers without requiring a buffer copy operation,

wherein the matrix switch negotiates to be an allocator of buffers between the matrix switch and any object coupled to its input and output to facilitate communication between the matrix switch and external objects as well as between its input(s) and

output(s) without the need for a memory copy operation,

wherein if the matrix switch is not able to be an allocator of a buffer for an input or an output of the matrix switch, a memory copy operation will be required to communicate with that input or output, and

wherein a memory copy operation is required to communicate information to/from an matrix switch input and/or output for which the matrix switch is not an allocator of a buffer associated with that input and/or output, even if the communication is internal to the matrix switch itself.

Claim 19. A computer-readable medium embodying code that implements a matrix switch object, comprising:

a dynamically determined number of inputs to receive content from one or more processing chains; and

a dynamically determined number of outputs, selectively coupling one or more of the dynamically determined inputs to one or more of the dynamically determined outputs, wherein the matrix switch negotiates with objects coupled to each of the dynamically determined inputs and outputs for buffer size and attribute requirements to facilitate communication between objects and within the matrix switch using a shared buffer of agreed upon size and attribute characteristics,

wherein if the matrix switch cannot negotiate an agreed upon buffer size and attribute characteristics between an input/output and an object coupled to the input/output, communication with the input/output is performed using a memory copy

operation,

wherein if an input/output of the matrix switch and an input/output of an object coupled to the input/output of the matrix switch do agree upon buffer size and attribute requirements, communication between the object and the matrix switch will be through a shared buffer coupling the input/output of the object to the input/output of the switch, and

wherein communication between the input/output of the matrix switch and a second input/output of the matrix switch will be through a shared buffer, unless the second input/output does not adhere to the agreed upon buffer size and attribute requirements.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:
5. The prior art does not expressly teach or render obvious the invention as recited in independent claims 1, 11, and 19.
6. Beaulier et al. (U.S. 5,162,904) discloses a matrix switch (abstract, lines 1-4) and one or more adjacent objects (see fig. 3), negotiating buffer size and attribute characteristics between an input/output of the matrix switch and an input/output of adjacent objects (col.4, lines 18-32 and fig. 3). Littlefield (U.S. 4,220,823) is combined with Beaulier to teach the use of a common buffer (Littlefield ; col.3, lines 36-45).
7. The combination of Beaulier and Littlefield, however, does not specifically disclose:

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“the matrix switch attempts to be an allocator for buffers shared with each of its input(s) and output(s), if the matrix switch cannot be an allocator for one or more of its input(s) or output(s), such input(s) and output(s) do not share a common buffer with objects coupled thereto, and the development project is a media processing project rendered as a filter graph of processing chains” as now recited in independent claim 1; “the matrix switch negotiates to be an allocator of buffers between the matrix switch and any object coupled to its input and output to facilitate communication between the matrix switch and external objects as well as between its input(s) and output(s) without the need for a memory copy operation, if the matrix switch is not able to be an allocator of a buffer for an input or an output of the matrix switch, a memory copy operation will be required to communicate with that input or output, and wherein a memory copy operation is required to communicate information to/from an matrix switch input and/or output for which the matrix switch is not an allocator of a buffer associated with that input and/or output, even if the communication is internal to the matrix switch itself” as now recited in independent claim 11; and “if the matrix switch cannot negotiate an agreed upon buffer size and attribute characteristics between an input/output and an object coupled to the input/output, communication with the input/output is performed using a memory copy operation, if an input/output of the matrix switch and an input/output of an object coupled to the input/output of the matrix switch do agree upon buffer size and attribute requirements, communication between the object and the matrix switch will be through a shared buffer coupling the input/output of the object to the input/output of the switch, and communication between the input/output of the matrix switch and a second input/output of the matrix switch will be through a shared buffer, unless the second input/output does not adhere

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to the agreed upon buffer size and attribute requirements” as now recited in independent claim 19.

8. Nor were references uncovered that would have provided a basis of evidence for asserting a motivation that one of ordinary skill level in the art at the time the invention was made, knowing of a method for processing media content in this specific environment, would have integrated or modified to teach the method of processing of media content including the specific features as recited in the context of independent claims 1, 11, and 19.

9. Dependent claims are allowed as they depend upon allowable independent claims.

10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

CONTACT INFORMATION

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (571) 272-3765.

The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, WILLIAM THOMSON can be reached at (571) 272-3718.

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The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner for patents

P O Box 1450

Alexandria, VA 22313-1450

VHN


WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100